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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,110	06/26/2003	Karp-sik Youn	1293.1731	3637

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EXAMINER	
MORRISON, THOMAS A	
ART UNIT	PAPER NUMBER
3653	

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/606,110	YOUN, KARP-SIK	
	Examiner	Art Unit	
	Thomas A. Morrison	3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7,9,11-15,21-23,25,26,28,29,31,33,35 and 36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,3-7,14 and 15* is/are allowed.

6)☒ Claim(s) *9,11-13,21-23,25,26,28,29,31,33,35 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 September 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 09/01/2006. These drawings (i.e., newly added Figures 10 and 11) have not been entered, because they introduce new matter. In particular, newly added Figs. 10-11 show details of how a solenoid 180 is arranged and connected to a shaking plate 166, which is not supported by the disclosure of the instant application. Thus, the newly added drawings (i.e., Figs. 10 and 11) have not been entered.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the solenoid set forth in claim 15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The amendment filed 09/01/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: (1) the amendment to numbered paragraph [0032] describing new Figures 10 and 11; and (2) the amendment to numbered paragraph [0047].

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

4. Claim 21 is objected to because of the following informalities: (1) claim 21 recites "the contact surface of the lever is disposed on the opening of the another contact surface of the stripper". This recitation should be -- the contact surface of the lever is disposed in the opening of the another contact surface of the stripper --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 21-23, 25-26, 28-29, 31 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 and its dependent claims 22, 25-26, 28-29, 31 and 33 recite "**a motor**, selectively contacting the plate to rotate the lever shaft". This recitation appears to be inaccurate, in that Figs. 5, 7 and 8 of the instant application do not show a motor selectively contacting a plate. Rather, these figures show a cam gear (170) with cam protrusions (170c) that selectively contact a plate (166), and show that the cam gear (170) is connected to a driving motor (172).

Claim 21 recites, "wherein the stripper comprises **another contact surface**". (emphasis added). However, claim 21 never recites a first contact surface. Thus, it is confusing as to how many contact surfaces are claimed in claim 21.

Claim 23 recites "**a motor**, selectively contacting the plate to rotate the lever shaft". This recitation appears to be inaccurate, in that Figs. 5, 7 and 8 of the instant application do not show a motor selectively contacting a plate. Rather, these figures show a cam gear (170) with cam protrusions (170c) that selectively contact a plate (166), and show that the cam gear (170) is connected to a driving motor (172).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 23 and 36, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,382,621 (Innoue et al.).

Regarding claim 23, Figs. 1-5 and 11-12 show an apparatus for preventing paper double feeding in a paper feeding unit of a printer having a frame (Fig.1), a pickup roller (2) which picks up paper stacked on a paper cassette (1) and transfers the paper into the printer, and a plurality of paper guides (11 in Fig. 2) which are installed at a portion of the paper cassette (1) and guide the paper transferred by the pickup roller (2) in a paper feeding path, the apparatus comprising:

a stripper (41 in Fig. 12) disposed on the paper feeding path, fixedly installed on the frame to be inclined at a predetermined angle with respect to the paper stacked on the paper cassette (1), and contacting the paper transferred by the pickup roller (2) to apply a first paper feeding resistance force to the paper;

a lever shaking unit, comprising

a lever shaft (9) movably installed on the frame,

a plate (8a) extending from the lever shaft (9), and

a motor (column 5, lines 16-18), selectively contacting the plate (8a) to rotate the lever shaft (9), and

a lever (8) disposed on the paper feeding path, installed on the shaft (9), and having a contact surface intermittently contacting the paper transferred by the pickup roller (2) to apply a second paper feeding resistance force to the paper.

Also, the lever (8) selectively contacts the paper while the stripper (41) contacts the paper.

Regarding claim 36, Figs. 1-5 and 11-12 show an apparatus for preventing paper double feeding in a paper feeding unit of a printer having a frame (Fig. 1), a pickup roller (2) which picks up paper stacked on a paper cassette (1) and transfers the paper into the printer, and a plurality of paper guides (11 in Fig. 2) which are installed at a portion of the paper cassette (1) and guide the paper transferred by the pickup roller (2) in a paper feeding path, the apparatus comprising:

a stripper (41 in Fig. 12) fixedly disposed on the paper feeding path to apply a first paper feeding resistance force to the paper fed by the pickup roller (2),

a lever (8) movably disposed on the paper feeding path to selectively apply a second paper feeding resistance force to the paper fed by the pickup roller (2), the lever (8) being installed on a lever shaft (9) rotatably installed on the frame;

a plate (8a) extending from the lever shaft (9), and

a shaker (10) controlling the lever (8), by intermittently shaking the plate (8a), to move with respect to the paper fed by the pickup roller (2), to intermittently contact the paper via the lever (8) while the stripper (41) contacts the paper.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,382,621 (Innoue et al.) in view of U.S. Patent No. 5,443,251 (Kan et al.), and further in view of U.S. Patent No. 6,217,017 (Yamazaki).

Regarding claim 9, Figs. 1-5 and 11-12 of Innoue et al. show an apparatus for preventing paper double feeding in a paper feeding unit of a printer having a frame (Fig. 1), a pickup roller (2) which picks un sheets of paper stacked on a paper cassette (1) and transfers the paper into the printer, and a plurality of paper guides (11 in Fig. 2) which are installed at a front portion of the paper cassette (1) and guide the paper transferred by the pickup roller (2), the apparatus comprising:

a stripper (41 in Fig. 12) which is installed to be inclined at a predetermined angle with respect to the paper stacked on the paper cassette (1),

a lever (8) which is installed at a side of the stripper (41) and has a contact surface to contact the paper transferred by the pickup roller (2),

a lever shaking unit which shakes the lever (8) to intermittently contact a side of the paper transferred by the pickup roller (2); and

a lever shaft (9) which is placed at the side of the stripper (41) and rotatably installed on the frame of the printer, wherein the lever (8) is fixed on the lever shaft (9),

and the lever shaking unit shakes the lever shaft (9) so that the lever (8) is shaken. The cam member (10) shakes the lever (8) as well as the shaft (9).

Also, a friction force is intermittently applied to the side of the paper by the lever (8), such that double feeding of the paper is prevented, and the lever shaking unit comprises:

a shaking plate (8a) fixed on a lever shaft (9),

a cam gear (10) which contacts a first side of the shaking plate (8a), rotates, and periodically shakes the shaking plate (8a) so that the lever (8) coupled with the lever shaft (9) is shaken, and

a driving motor (column 5, lines 16-18) which rotates and drives the cam gear (10).

Moreover, Fig. 12 of Innoue et al. shows that it is well known to provide a stripper (41) on a face of at least one paper guide (11), but does not specifically show that such stripper is attached to at least one front side of each of the paper guides (11). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to provide the same stripper on the front sides of both guides (11), so as to avoid the possibility of skewed feeding of sheets due to a difference in friction applied to different portions of the sheets by the two different guides.

Also, the Innoue et al. patent does not show an elastic member, as claimed.

Figs. 27-29 of the Kan et al. patent show that it is well known to provide an elastic member (215) that biases a lever (57) in a first direction (i.e., biased into contact with a cam). The Kan et al. patent explains that element 57 is always pressed against

the cam 213 by a bias spring 215. Accordingly, element 57 can be pivoted by the cam against the bias force of the spring. It would have been obvious to one of ordinary skill in the art at the time of the invention, to provide the lever (8) of Innoue et al. with an elastic member to bias the lever (8) toward the cam (10) of Innoue and ensure that the lever follows the cam surface of the cam, as shown in Kan et al. See also column 20, lines 11-17 of Kan et al.

Innoue et al., as modified by Kan et al. meets all of the limitations of claim 9, except that the driving motor does not rotate and drive the cam gear (10), as well as the pickup roller (2), as claimed.

Figs. 1 and 8-10 of the Yamazaki patent disclose that it is well known to use the same motor (30) to drive a pickup roller (20) and a cam gear (including 33) that operates a lever (28). See e.g., Figs. 1, 8-10 and column 4, line 48-62. Such use of a single motor reduces the number of parts. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a single motor to drive the pickup roller and the cam gear in order to reduce the number of parts, as shown in Yamazaki.

Regarding claim 13, the cam gear (10) of Innoue et al. comprises a cam surface; and the lever shaking unit comprises at least one cam protrusion formed on the cam surface that contacts the shaking plate (8a).

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,382,621 (Innoue et al.)(hereinafter "Innoue '621") in view of Kan et al. and Yamazaki as applied to claim 9 above, and further in view of U.S. Patent No.

6,000,689 (Innoue et al.)(hereinafter "Innoue '689"). The Innoue '621, Kan et al. and Yamazaki patents disclose the claimed invention except for a compression coil spring.

Fig. 3 of Innoue '689 shows that it is well known to use a compression coil spring (11) to bias a lever (7) in the direction of a cam member (8). These two elements were art recognized equivalents at the time of the invention in those lever moving applications where it is immaterial whether a compression coil spring or a tension spring is used for biasing a lever. Therefore, one of ordinary skill would have found it obvious to substitute a compression coil spring for the tension spring of Kan et al to facilitate biasing of the lever as suggested by Fig. 3 of Innoue '689. One of ordinary skill in the art would have been motivated to use a compression coil spring rather than a tension spring to simplify assembly, by eliminating the step of connecting a small end portion of the tension spring into a small hole in a lever portion, as shown in Fig. 28A of Kan et al.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Innoue et al. in view of Kan et al. and Yamazaki as applied to claim 9 above, and further in view of U.S. Patent No. 5,485,991 (Hirano et al.). Innoue et al. in view of Kan et al. and Yamazaki meets the limitations of the claim except that it employs a tension spring rather than a leaf spring in order to hold the shaking plate against the cam. Fig. 20 of the Hirano et al. patent discloses that it is well known to bias a movable member (13) into contact with a cam (10) using a leaf spring (12). More specifically, the Hirano patent shows that these two elements were art recognized equivalents at the time of the invention in those shaking applications where it is immaterial whether a leaf spring or a tension spring is used for holding a shaking plate against a cam. Therefore, one of

ordinary skill would have found it obvious to substitute a leaf spring for the tension spring of Kan et al. to facilitate holding of the shaking plate against the cam as suggested by Fig. 20 of the Hirano et al. patent. One of ordinary skill in the art would have been motivated to use a leaf spring rather than a tension spring to simplify assembly, by eliminating the step of connecting a small end portion of the tension spring into a small hole in a lever portion, as shown in Fig. 28A of Kan et al.

10. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,382,621 (Innoue et al.) in view of U.S. Patent No. 6,217,017 (Yamazaki).

Regarding claim 35, Figs. 1-5 and 11-12 of Innoue et al. show an apparatus for preventing paper double feeding in a paper feeding unit of a printer having a frame (Fig. 1), a pickup roller (2) which picks up paper stacked on a paper cassette (1) and transfers the paper into the printer, and a plurality of paper guides (11 in Fig. 2) which are installed at a portion of the paper cassette (1) and guide the paper transferred by the pickup roller (2) in a paper feeding path, the apparatus comprising:

a stripper (41 in Fig. 12) disposed on the paper feeding path, fixedly installed on the frame to be inclined at a predetermined angle with respect to the paper stacked on the paper cassette (1), and contacting the paper transferred by the pickup roller (2) to apply a first paper feeding resistance force to the paper;

a lever (8) disposed on the paper feeding path, movabley installed on the frame, and having a contact surface contacting the paper transferred by the pickup roller (2) to apply a second paper feeding resistance force to the paper.

Also, the Innoue et al. patent discloses a motor (column 5, lines 16-18), but does not specifically disclose that such motor rotates the pickup roller (2) and moves the lever (8) with respect to the stripper (41).

Figs. 1 and 8-10 of the Yamazaki patent disclose that it is well known to use the same motor (30) to drive a pickup roller (20) and to operate a lever (28). See e.g., Figs. 1, 8-10 and column 4, line 48-62. Such use of a single motor reduces the number of parts. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a single motor to drive the pickup roller and the cam gear in order to reduce the number of parts, as shown in Yamazaki.

Response to Arguments

11. Applicant's arguments filed 09/01/2006 have been fully considered but they are not persuasive.

> Claim 23 has been rewritten in independent form, and recites: "...wherein the lever selectively contacts the paper while the stripper contacts the paper." And amended, independent claim 36 recites: "...a shaker controlling the lever by intermittently shaking the plate to move with respect to the paper fed by the pickup roller, to intermittently contact the paper via the lever while the stripper contacts the paper." Regarding claims 23 and 25, it appears, according to the Examiner's interpretation of Innoue, that claims 23 and 25 are mutually exclusive. As shown in FIG. 13 of Innoue, since multifold feeding preventing member 41 protrudes from movable separation slope surface 8, a piece of paper cannot simultaneously contact both multifold feeding preventing member 41 and movable separation slope surface 8. In other words, if movable separation slope surface 8 is in the position shown in FIG. 11, no paper is contacting the multifold feeding preventing member 41. And if movable separation slope surface 8 is in the position shown in FIG. 12, and a paper is contacting the multifold feeding preventing member 41, such a paper cannot also contact the movable separation slope surface 8. Further, if movable separation slope surface 8 moves from the position shown in FIG. 12 to the position shown in FIG. 11 while a paper is contacting the multifold feeding preventing member 41, the movable separation slope

> surface 8 would remove the paper from contacting the multifold feeding preventing member 41. Accordingly, Applicant respectfully submits that Innoue neither discloses nor suggests "...wherein the lever selectively contacts the paper while the stripper contacts the paper." Applicant respectfully submits that independent claims 23 and 36 patentably distinguish over the cited art and should be allowable for at least the above-mentioned reasons.

In response, column 10, lines 52-61 of Innoue et al. explain the effect of both the stripper (41) and the lever (8) acting on the paper. Thus, it is the examiner's position that both the lever (8) and the stripper (41) act on the paper, as now set forth in claims 23 and 36.

Moreover, based on the positions of lever (8) and stripper (41) in Figure 11 and the positions of lever (8) and stripper (41) in Fig. 12, there is some transition point in moving the lever from its position in Fig. 11 to its position shown in Fig. 12 or vice versa at which lever (8) and stripper (41) are at the same elevation. At this elevation, the paper contacts both lever (8) and stripper (41). This scenario is cyclical e.g., as shown in Figs. 1-5, and thus, this scenario also meets the limitations of claims 23 and 36.

Applicant's arguments with respect to claims 10 and 35 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

12. Claims 1, 3-7, 14 and 15 are allowed. For claim 15, the drawing objections outlined above must also be addressed. Claims 21-22, 25-26, 28-29, 31 and 33 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11/12/2006

PATRICK MACKEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

FIG. 10

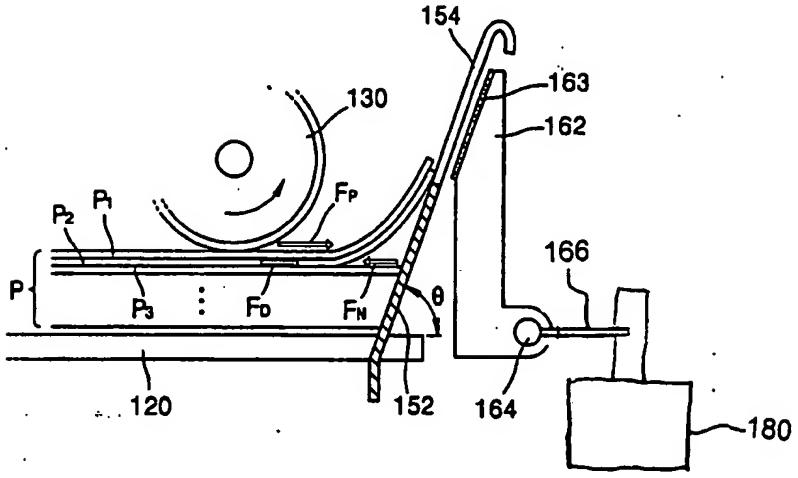
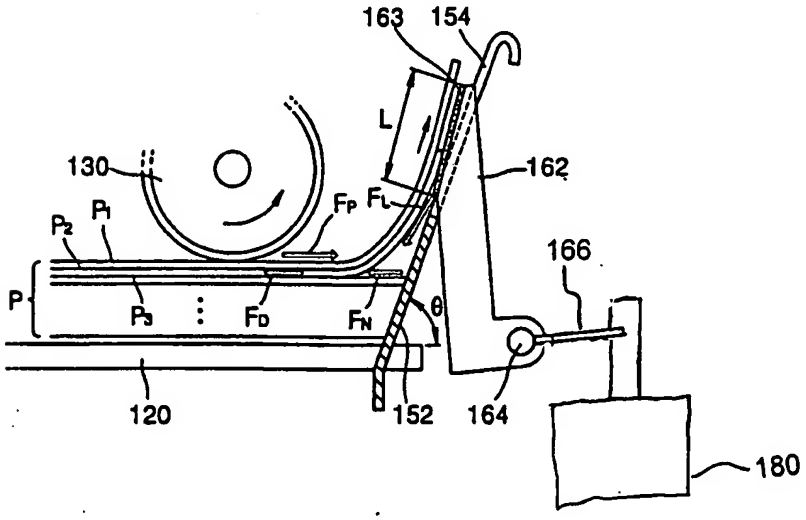


FIG. 11



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